

67311

Investigation of 0.5- to 16-kev Electron Penetration SOV/181-1-8-16/32  
Through Collodion- and Gold Films

100-150 ev) and fast (from 100-150 ev and above) electrons.<sup>21</sup>  
In all cases of primary electron energy and sample thickness the slow electrons form a considerable part of the total number of departed electrons. Slowing down and scattering of fast and slow electrons follow various laws. The law of energy loss by fast electrons reads  $dE/dx = \text{const}$ . Thus, the law of primary-electron slowing-down in gold is linear, at least in a certain interval of electron energies and film thicknesses. The authors thank A. R. Shul'man, in whose laboratory the present investigation was performed, and also the student Yu. M. Voron who assisted in the measurements. There are 11 figures and 14 references, 3 of which are Soviet.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina  
(Leningrad Polytechnic Institute imeni M. I. Kalinin)

SUBMITTED: August 18, 1958

Card 2/2

87457

S/057/60/030/012/004/011  
B019/B056

26.2011

AUTHORS: Burtsev, V. A., Stolov, A. M., Shakhov, V. V.

TITLE: Measurement of the Energy Flux Emitted by Plasma in  
"Al'fa" Research Installation

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 12,  
pp. 1415 - 1421

TEXT: For measuring the energy emitted from the walls of the discharge chamber, a spherical black body with a low thermal capacity and an absorption coefficient of nearly unity was used. By means of this black body only measurements of the total energy emission could be made, because its time lag was too great. For measuring the time dependence of the energy fluxes, a plane pickup (chromel thermocouple) was used. The signals of the two pickups were made visible by an oscilloscope. The measurements showed that the apparatus used here records not only that part of the energy which is introduced into the plasma. It is assumed that by arc discharges a considerable part of energy is liberated by local emissions, and also a loss occurs as a result of oscillations of

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Measurement of the Energy Flux Emitted by  
Plasma in "Al'fa" Research Installation

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the magnetic field of discharge. The recorded energy emission practically begins with a considerable lag relative to the beginning of discharge. The authors thank B. P. Konstantinov for the suggestion to use a black body for the measurements, and they also thank L. M. Andrezen and L. I. Zantova of the chemical laboratory for their help in producing the pickups. There are 7 figures and 4 Soviet references.

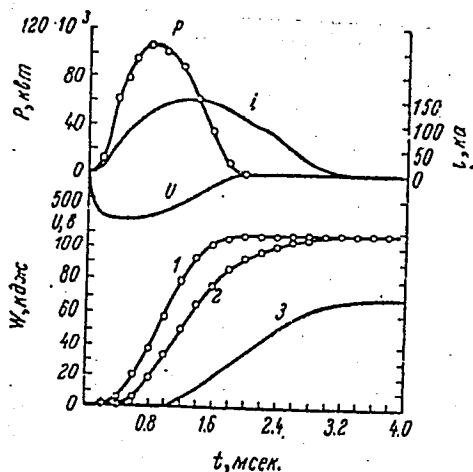
ASSOCIATION: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury (Scientific Research Institute of Electro-physical Apparatus)

SUBMITTED: July 15, 1960

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S/057/60/030/012/004/011  
B019/B056



Legend to Fig.7: P total power, i total current in plasma, U bypass voltage, 1 total energy introduced into plasma, 2 total energy calculated from magnetic field energy, 3 measured energy.

Fig. 7. Уход энергии из плазмы во времени.

Card 3/3

ACC NR: AP6032121 (A,N) SOURCE CODE: UR/0346/66/000/010/0036/0038

AUTHOR: Chernyshev, V. V.; Burtsev, V. I.; Kushnir, A. T.; Orlov, V. A.

ORG: none

TITLE: Immunity to plague in weaned piglets vaccinated with an avirulent, dry, vaccine aerosol

SOURCE: Veterinariya, no. 10, 1966, 36-38

TOPIC TAGS: immunity, plague, pig, biologic aerosol, veterinary medicine, vaccine

ABSTRACT: The time required for vaccination to produce effective immunity, and the duration of immunity, were studied in piglets vaccinated against plague with an avirulent, dry, viral vaccine in aerosol. Healthy, two-month-old, weaned piglets, taken from both vaccinated and nonvaccinated sows, were used. Table 1 shows the results of the attempt to infect piglets, some of which were vaccinated by aerosol and some intramuscularly, with plague. The experimental data showed that by far less vaccine is required for aerosol than for intramuscular vaccination, and that immunity develops after, and is effective for, approximately the same periods with both methods. The authors suggest that wide application of this efficient method will save considerable time for veterinary workers.

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UDC: 619:616.988.75-0971:636.4

ACC NR: AP6032121

**Table 1. Results of attempt to inject piglets vaccinated by aerosol or intramuscularly against plague (virus dose  $1 \cdot 10^5$  LD<sub>50</sub> ml)**

Vaccination method	Vaccine dose	Time of infection after vaccination (days)	Result of injection*
From nonvaccinated sows		1	n n n n n n n n n n
		4	n n n n n n n n n n
		5	n n n n n n n n n n
		8	n n n n n n n n n n
		10	n n n n n n n n n n
		20	n n n n n n n n n n
		30	n n n n n n n n n n
		40	n n n n n n n n n n
		50	n n n n n n n n n n
		60	n n n n n n n n n n
		70	n n n n n n n n n n
		80	n n n n n n n n n n
		90	n n n n n n n n n n
		100	n n n n n n n n n n
By aerosol... 1.0			n n n n n n n n n n
Intramuscular 1.0			n n n n n n n n n n

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ACC NR: AP6032121

\*Numerator - number of animals  
falling sick; denominator - number  
of animals in experiment.

Vaccination method	Vaccine dose	Time of infec- tion after vac- cination (days)	Result of injection*
From vaccinated boys			
By aerosol...			
Intramuscular			

Orig. art. has: 1 table

[WA-50; CBE No. 14]  
[EL]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 005

Card 3/3

Table 1 cont.

BURTSEV, V.I.

Broadening engineering potentialities of machine tools.  
Mashinostroitel' no.10:25 0 '61. (MIRA 14:9)  
(Machine tools)

ZHAVORONKOVA, L.Yu.; BURTSEV, V.I.

Characteristics of the clinical course of peptic ulcer in elderly persons. Sov. med. 28 no.6:52-57 Je '65. (MLRA 18:6)

1. Kafedra fakul'tetskoy terapii I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

ARKHIPOV, N.I.; MURSEV, V.I.; PICHUGIN, L.M.

Immunomorphological reactions in swine vaccinated against  
foot-and-mouth disease. Veterinariia 42 no.5:37-39 My '65.  
(MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy  
virusologii i mikrobiologii.

L 19005-63

BDS/EWT(d)/EEC(b)-2

AFFTC/ASD/ESD-3/RADC/APGC/IJP(C)

Pg-4/PK-4/Pl-4/Pm-4/Po-4/Pq-4 BC

ACCESSION NR: AP3002488

S/0119/63/000/006/0010/0014

~~X~~ B

AUTHOR: Burtsev, V. K.; Svecharnik, D. V.

TITLE: Reliability and effectiveness of automatic control and regulation systems

SOURCE: Priborostroyeniye, no. 6, 1963, 10-14

TOPIC TAGS: reliability, effectiveness, automatic control, automatic regulation

ABSTRACT: Suggestions for evaluating reliability and effectiveness of automatic-control equipment and systems are made. This formula is offered for computing the effectiveness

$$E = \frac{Bt - C_d - C_o}{Bt}$$

where B is the system productivity in rubles/year,  $C_d$  is the cost of developing and operating the system,  $C_o$  is loss caused by the system failure to operate, t is time of operation. The ratio  $T/T_0$ , where T is the average time between two consecutive failures of the system and  $T_0$  is same of a "standard" system, is said to be "a measure of progress in increasing the reliability." A system-cost vs.

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L 19005-63

ACCESSION NR: AP3002488

reliability curve is developed with an "optimum reliability" point on it. Further, outages, time of restoration of operability, and their influence on the effectiveness are analyzed. An example is given of computing reliability of an automatic-control system including a transistorized amplifier; Poisson distribution is used. Orig. art. has: 4 figures, 18 formulas, and 2 tables.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 12Jul63

ENCL: 00

SUB CODE: IE

NO REF SOV: 015

OTHER: 000

Card 2/2

BURTSEV, V.M.; KAKHANCVICH, T.M.; KUBASSKIY, S.I.; LAPSHIN, P.V.;  
REYZNER, Yu.B., nauchnyy red.; TYUTYUNIK, M.S., red. izd-  
va; MOCHALINA, Z.S., tekhn. red.

[Automation of the grinding and calcination of gypsum] Opyt  
avtomatizatsii pomola i varki gipsa. Moskva, Gosstroizdat,  
1962. 59 p. (MIRA 15:7)

(Gypsum)

SHIFRIN, S.M., doktor tekhn. nauk (Leningrad); BURTSEV, V.P., inzh.  
(Leningrad)

Purification of waste waters of cheese factories. Vol. I  
san. tekhn. no.10:30-32 0 '65. (MIRA 18:11)

**BURTSNV, V.S.**

~~Consumers' cooperatives for new collective farm settlements, Sel'.  
stroil. 12 no.11:24 N '57.~~ (MIRA 10:11)

1. Nachal'nik "Rosglavkoopkhozstorga" Rospotrebsoyuza.  
(Cooperative societies)

PLEASE I HAVE INFORMATION 507/6501

Abstracts from USSR. Konditsiya po fiziko-khimicheskim osnovam proizvodstva stali  
Primeneniye vakuumu v metallurgii (Use of Vacuum in Metallurgy). Moscow, Izdat-  
vo Stal. 1960. 334 p. English also inserted. 4,500 copies printed.

At SSCS, 1960. . . J. P. Krtina allp inserted. 4,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR, Institut metallurgii i zheleznykh rudy, Institut fiziko-khimicheskikh osnovov proizvodstva stali.  
Instituta po fiziko-khimicheskimi osnovam proizvodstva stali.

**Temp. Ed.: A.M. Smolin, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: G.M. Makovskiy; Tech. Ed.: S.G. Markovitch.**

**PURPOSE:** This collection of articles is intended for technical personnel interested in recent studies and developments of vacuum steels, practice and equipment.

**CONTENTS:** The book contains information on steel salting in vacuum induction furnaces, and vacuum arc furnaces, reduction processes in vacuum, and degassing of steel and alloy. The fundamentals of apparatus and equipment, particularly vacuum furnaces and vacuum boiler pumps is also analyzed. Periodicals are included in connection with some of the articles and will appear in the table of contents. These articles have been translated from English. Some of the

Karschew, J. P., and S. I. Kharitk. Effect of Vacuum Treatment (in a Bell) of the Carbonless Petrochryne on the Amount of Its Oxide Inclusions

Pedgley, J. P., and P. J. Shumry. Physicochemical Principles of Vacuum-Thermal Methods of Treating Lignite 137

## PART IV. DEGRADING OF STEEL AND ALLOYS

Boyle, L.H., A.I. Lukatsky, and A.M. Zaslavsky. Vacuum Treatment of Boneless  
52001

KINETIC, M.P., and C.F. TUBANOV. The Effect of Vacuum Treatment in Ladle on the Properties of Bessemer Ball Steel 151

Kuznetsov, A. I., and V. D. Kozlov. The Effect of Vacuum Treatment in Ladles on the Weldability of Bessemer Constructional Steel 1966

Otto, A. W., G. A. Schryver, J. L. Leisner, Ben Yacover, V. L. Danilov, and K. O. Lapshova. Use of Vacuum for Improving the Quality of Alloyed Steels 166

Mathematics, A.M., and Ph.D. Salient, "The Theoretical and Practical Prob-  
lems of Steel Designing

Chenks, H.M., A.P. Ilyubskiy, and Ye.I. Kadnikov. The Effect of Vacuum Treatment of Metal Pouring on the Quality of Slab Steel (the work was carried out in the Laboratory of Metal Treatment under Vacuum) (Intermediate Report).

performed by the Dnepropetrovsk Metallurgical Institute (Dnepropetrovsk Metallurgical Institute) and the "Dnepropetrestal'" (Dnepropetrovsk Metallurgical Institute) and the "Dnepropetrestal'" (Dnepropetrovsk Metallurgical Institute) with the participation of engineers

V.B. Butovskiy, N.P. Kondashov, Z.M. Sokolov, L.V. Barash, A.S. Ranz, Yu.P. Shvets, A.I. Deltsov, P.A. Zhalo, Yu.P. Valovitch and G.P. Parkhomenko] 18

Tolstoguzov, V. V., Kozlovskiy, A. S., Glasov, L. I., Polak, M. D., Chirgoverich, P. M., Dudlov, and Ye. S. Shchukin. Vacuum Treatment of Molten Transformer Oil and of Graphite [A. S. Gerasimov, P. S. Piskunov, and M. D. Chirgoverich].

[illegible]

Butskoy, D. K., L.N. Molodtsov and Prokhorovskiy, A. A.  
Treated Steel for Castings

Use of Vacuum for Raising the Quality of Aluminum Alloys

200. II - Polish People's Republic, manufacture of steel (including in connection with the Vietnam Halting and Pouring of Allied Carbon Steel) 2

Burtsev, V. T., N. I. Karasov and A. M. Samarin.  
Desulfurization of Molten  
Iron Alloys in Vacuum

Vikharov, A. P., and V. V. Kondakova. Destruction of Nonmetallic Inclusions in the Vacuum Treatment of Steel

Driving, H. Yu. N. A. Karyazov and A. M. Smirnov. Investigation of the Kinetics of Steel Decarburization in Vacuum by Means of a Mass Spectrometer 2

Muskhin, K.I., O.A. Tselin, and B.M. Lezhinskikh. The Effect of Hydrogen and Nitrogen on the Activity of Silicon in Molten Cast Iron 2

Marquet, R.H. Investigation of Gas Liberation and Penetrability of Ceramics in Vacuum 2

S/030/60/000/010/017/018  
B021/B058

AUTHOR: Burtsev, V. T., Engineer

TITLE: Using Vacuum in Metallurgy

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, No. 10, pp. 114 - 115

TEXT: The Third Conference on Using Vacuum in Metallurgy was held by the Institut metallurgii im. A. A. Baykova Akademii nauk SSSR (Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR) from June 28 to July 2, 1960. Delegates from academic and scientific research- and branch institutes, colleges and metallurgical plants attended. The majority of the reports dealt with studies connected with industrial melting of steel and thermally stable alloys in induction- and electric-arc vacuum furnaces. Electric-arc vacuum remelting is being increasingly used at present. The following lectures were delivered: S. A. Leybenzon, on investigations in the furnace with a capacity of from 400 to 430 kg. the remolten steel of type Л1Х15 (ShKh15) being specially mentioned;

✓

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Using Vacuum in Metallurgy

S/030/60/000/010/017/018  
B021/B058

S. F. Burlakov and G. P. Bestsennyi, on automation of the melting of alloys in electric-arc vacuum furnaces; S. P. Zamotayev, on the successful use of the vacuum for the casting of large ingots at the Ural'skiy mashinostroitel'nyy zavod (Ural Machine Construction Plant);

A. M. Samarin, on prospects for using the vacuum in metallurgy. ✓  
Results of production scale experiments on precision casting of heat-resistant alloys and stainless steel were given; vacuum degassing of steel in the ladle, vacuum and inert atmosphere casting, application of vacuum in nonferrous metallurgy to obtain tellurium, selenium, boron, and tin were also the subject of discussion. Reports were delivered on new vacuum furnaces, design, construction, and operation of vacuum rolling mills, and on laboratory equipment for the study of metals in vacuum at temperatures up to 1200°C. Finally the author states that the Conference was as useful for scientists in the field of metallurgy as for plant experts. Before the Conference, two weeks' courses on vacuum metallurgy were held for collaborators of metallurgical plants and scientific research institutes. These courses are described as being very useful for the engineering- and technical personnel of metallurgical plants.

Card 2/2

BURTSEV, V.T., inzh.

Physicochemical bases of steel production. Vest. AN SSSR 31  
no.10:138-140 0 '61. (MIRA 14:9)  
(Steel--Metallurgy)

BURTSEV, V.T. (Moskva); KARASEV, R.A. (Moskva); SAMARIN, A.M. (Moskva)

Sulfur vapor pressure in contact with iron - sulfur melts. Izv.  
AN SSSR. Otd. tekhn. nauk. Met. i topl. no.2:42-48 Mr-Apr '62.  
(MIRA 15:4)

(Vapor pressure--Measurement) (Desulfuration)

BURTSEV, V. T. (Moskva); KARASEV, R. A. (Moskva); SAMARIN, A. M. (Moskva)

Mechanism of evaporation and the pressure of sulfur vapors  
on iron-carbon-sulfur melts. Izv. AN SSSR. Otd. tekhn. nauk.  
Met. i topl. no.6:32-36 N-D '62. (MIRA 16:1)

(Iron--Metallurgy) (Desulfuration)  
(Vapor pressure)

BURTSEV, V.T.; SAMARIN, A.M.

Pressure of saturated vapors of liquid metals and their  
impurities investigated by the carrying gas method. Zav.lab. 28  
no.10:1199-1203 '62. (MIRA 15:10)

1. Institut metallurgii imeni A.A. Baykova.  
(Liquid metals) (Vapor pressure)

BURTSEV, V.T.; MOLDAVSKIY, O.D.

Vacuum arc furnace for steelmaking. Biul.tekh.-ekon.inform.Gos.  
nauch.-issl.inst.nauch.i tekhn.inform. no.2:3-6 '63.

(MIRA 16:2)

(Electric furnaces)

S/032/63/029/003/020/020  
B101/B186

AUTHOR: Burtsev, V. T.

TITLE: Conference on Experimental Techniques and High-temperature Measurements Methods

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 3, 1963, 380

TEXT: In 1962, the Vtoroye soveshchaniye po eksperimental'noy tekhnike i metodam vysokotemperaturnykh izmereniy (Second Conference on Experimental Techniques and High-temperature Measurements Methods) was held at the Institut metallurgii im. A. A. Baykova (Institute of Metallurgy imeni A. A. Baykov). It was attended by 70 representatives of metallurgical works, of schools of higher education, and of scientific and industrial research institutes. Numerous lectures dealt with methods of temperature measurements by means of pyrometers, pickups of local heat currents, and different types of thermocouples. D. Ya. Svet lectured on new methods and systems of pyrometry, based on the spectral distribution of the radiation energy. S. K. Danishevskiy et al. reported on the development and practical use of thermocouples of tungsten-rhenium alloys in metallurgy which possess high thermo-emf and are heat-resistant up to 2500°C. Data Card 1/3

Conference on Experimental Techniques ...

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B101/B186

on new temperature measurement methods, using sighting tubes, were disclosed. Several lectures dealt with methods and devices for measuring thermal and electrical conductivity and viscosity of molten metals and slags. B. M. Nikitin and N. M. Chuyko studied the conductivity of molten slag in the industrial furnace. V. I. Zhuchkov and A. S. Mikulinskiy described the measuring of the electric resistance of materials and charges. The sum of all factors influencing the resistance of charges were measured. Such new devices as an electromagnetic vibrational viscosimeter, a balance for continuous weighing in vacuo at high temperatures were described. Methods for studying the evaporation of sulfur from metals and the kinetics of the nitrogen liberation by means of a mass spectrometer were discussed. V. Y. Grigoryan and Yu. A. Minayev developed an experimental device for investigating the evaporation of sulfur in liquid slag. V. M. Amonenko et al. determined the steam pressure of high-melting metals by way of the evaporation rate from a cylindrical crucible. In another series, the kinetics of interaction between oxides and metal was dealt with. Data on phase diagrams of high-melting and high-reactive metals as well as on the systems Nb-Zr-Hf-C, Cr-Nb-Ti, and Cr-Si were given. There was a report by A. M. Samarin on a gas analysis

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Conference on Experimental Techniques ...

S/032/63/029/003/020/020  
B101/B186

apparatus using a rarefied inert gas jet. The gas content of molten metals and zonal remelting, using an electron beam to remove gaseous impurities was discussed. E. N. Vitol' reported on the determination of oxygen in cerium, lanthanum, boron, zirconium and graphite by the isotope method.

Card 3/3

BURTSEV, V.T. (Moskva) KOREMAN, Yu.I. (Moskva); SAMARIN, A.M. (Moskva)

Kinetics of the removal of sulfur compounds during the vacuum  
treatment of iron-carbon melts. Izv. AN SSSR Met. i gor. delo  
no.3:58-62 My-Je'64 (MIRA 17:7)

BURTSEV, V.T. (Moskva); KARASEV, R.A. (Moskva); POLYAKOV, A.Yu. (Moskva);  
SAMARIN, A.M. (Moskva)

Investigating with the help of a mass-spectrometer, the products  
of the decarburization reaction during the smelting of iron in  
vacuum. Izv. AN SSSR. Met. no.1:55-58 Ja-F '65. (MIRA 18:5)

BURTSEV, V.T.; VERTMAN, A.A.; SAMARIN, A.M.; FILIPP, G.

Kinetics of gas liberation during the inoculation of liquid  
cast iron. Lit. proizv. no.3:25-27 Mr '65. (MIRA 18:6)

BURTSEV, V.T.; FILIPP, G.I.; POLYAKOV, A.Yu.; SAMARIN, A.M.

Studying the kinetics of gas liberation in the vacuum treatment  
of liquid iron. Zav. lab. 31 no.1:80-83 '65.

(MIRA 18:3)

1. Institut metallurgii imeni Baykova.

BURTSEV, V.T. (Moskva); GLEBOVSKIY, V.G. (Moskva); POLYAKOV, A.Yu. (Moskva);  
SAMARIN, A.M. (Moskva)

Sulfur and oxygen distribution between iron and limestone-alumina  
slag during suspension smelting. Izv. AN SSSR. Met. no.6:24-27  
N-D '65. (MIRA 19:1)

1. Submitted February 13, 1965.

BURTSEV, V.T.; GLEBOVSKIY, V.G.

Method for studying the distribution of impurities between the  
metal and the slag during melting in suspension. Zav. lab. 31  
no.11:1352-1356 '65. (MIRA 19:1)

1. Institut metallurgii imeni Baykova, Moskva.

L 36118-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/GD  
 ACC NR: AT6016940 (N) SOURCE CODE: UR/0000/65/000/000/0087/0096

AUTHORS: Filipp, G. I., Burtsev, V. T., Polyakov, A. Ya., Samarin, A. M. 57

ORG: None

TITLE: Degassing of iron carbide melts in vacuum

SOURCE: AN SSSR. Institut metallurgii. Protsessy vosstanovleniya i plavleniya zheleza (Processes of reduction and melting of iron). Moscow, Izd-vo Nauka, 1965, 87-96

TOPIC TAGS: Vacuum degassing, iron base alloy, gas kinetics, carbide /MKh-13-02 mass spectrophotometer 24

ABSTRACT: Quantity and composition of gases evolved during evacuation of iron carbide melts and subsequent deoxidation with silicon, manganese, and aluminum have been investigated. The amount of the evolved gases was determined at constant pressure by means of a rheometer, and the gaseous samples were analyzed on a mass spectrophotometer MKh-13-02. The diagrams of the experimental set-up and vacuum induction furnace are shown, and the composition of the metal, specific gas evolution, and composition of the extracted gas are tabulated.

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L 36118-66

ACC NR: AT6016940

Specific gas evolution from iron carbide as function of the carbon content  $\circ$  and method of reduction are illustrated in Fig. 1. The kinetics of the removal of various gases under various conditions is also illustrated. Specific gas evolution from Fe-C-O melt at 1873K and 0.01-0.2 mm

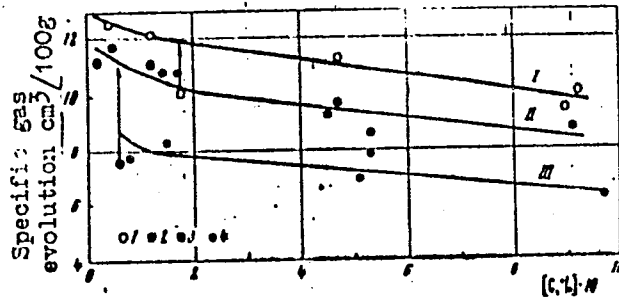


Fig. 1. Specific gas evolution of iron carbide melt at 1873C and 0.01-0.02mm, as function of carbon content and reduction: 1 - no reduction; 2 - reduction with 0.4% Mn; 3 - reduction with 0.4% Mn + 0.2% Si; 4 - reduction with 0.4% Mn + 0.2% Si + 0.1% Al; (Time of gas sampling: I - at melting; II - in 5 min; III - in 10 min after melting.)

2/3

L 36118-66

ACC NR: AT6016940

changes in the interval of C content 0.005--1.0% from 9.70 to 12.51 cm<sup>3</sup>/100g, decreasing proportionally with an increased C content. Specific gas evolution of such melts deoxidized by Si, Mn, or Al is decreased 1.5 times. The rate of degassing of the metal melted in crucibles is 1.5 to 2 times higher than when it is melted in a suspension. Orig. art. has: 6 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 27 Sep 65/ ORIG REF: 008/ OTH REF: 002

3/3 *egh*

I 37733-66 EWT(m)/EWP(k)/EWP(t)/EWP(e)/ETI IJP(c) JD/JG  
 ACC NR: AP6017104 (A) SOURCE CODE: UR/0226/66/000/001/0050/0054

AUTHORS: Burtsev, V. T.; Vasyukov, G. Kh.; Kashin, V. I.; Samarin, A. M.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

TITLE: Liberation of gas from tungsten at 2500C

SOURCE: Poroshkovaya metallurgiya, no. 1, 1966, 50-54

TOPIC TAGS: tungsten, powder metal, powder metal compaction, powder metal sintering, VACUUM DEGASSING, CARBON MONOXIDE, HYDROGEN

ABSTRACT: The nature and quantity of gas liberated at 2500C from sintered and vacuum cast tungsten were determined by mass spectrometry. A schematic of the vacuum furnace and the experimental installation is presented. The detailed description of the experimental apparatus and procedure is given by V. T. Burtsev, Yu. I. Korbman, and A. M. Samarin (Izv. AN SSSR, Metallurgiya i gornoye delo, No. 3, 58, 1964). The experimental results are presented in graphs and tables (see Fig. 1). Vacuum smelting of tungsten by electron-beam techniques is the most efficient procedure for the removal of residual gases from the metal. It is suggested that sintered tungsten bars should be subjected to a preliminary degassing treatment in vacuum resistance furnaces.

Cord 1/2

L 37233-66  
ACC NR: AP6017104

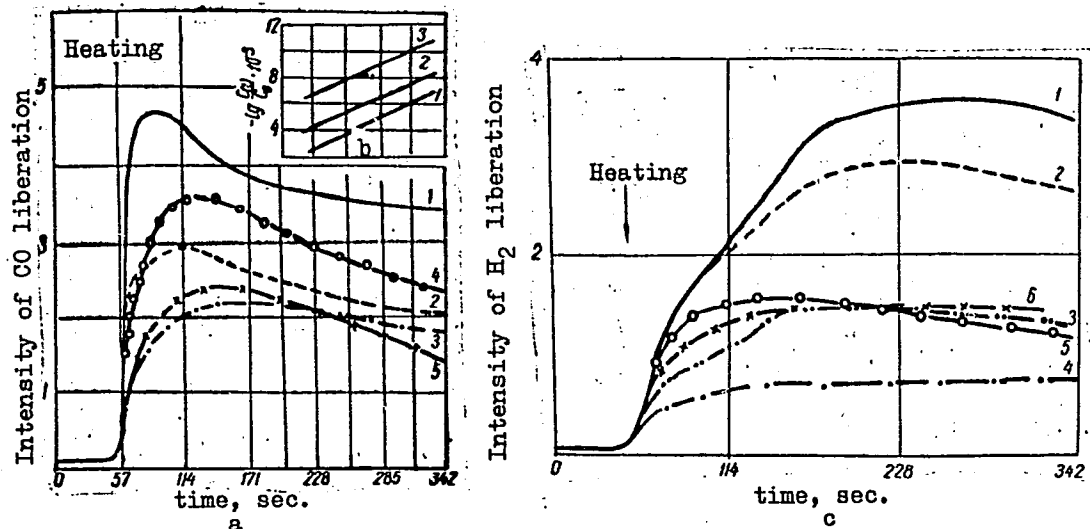


Fig. 1. Kinetics of the liberation of carbon monoxide (a and b) and hydrogen from tungsten at 2500C and  $10^{-5}$  mm Hg as a function of the nature and type of treatment of specimens: (a and b): 1 - sintered, 2 - vacuum smelted in arc furnace, 3 - vacuum smelted in electron-beam furnace, 4, 5 - bar after 3 and 6 hours annealing; (c): 1 - sintered, 2, 3 - first and second smelting in arc furnace, 4 - electron-beam smelting, 5 and 6 - bar after 3 and 6 hours annealing. Orig. art. has: 3 figures and 1 table. Card 2/2 SUB CODE: 11/ SUBM DATE: 27May65/ ORIG REF: 010

Burtsev, V. V.

133-2-3/19

AUTHORS: Suchkov, I.A. and Burtsev, V.V. (Engineers)

TITLE: An Automatic Control of Gas Distribution in the Blast Furnace Stack (Avtomaticheskii kontrol' gasoraspredeleniya v shakhte domennoy pechi)

PERIODICAL: Stal', 1958, Nr 2, pp.110-113 (USSR)

ABSTRACT: The development of the apparatus for the control of the distribution of the gas stream along two perpendicular diameters in the furnace throat below the stock level carried out by KIP on the Kuznetsk Metallurgical Combine is described. Initially (1953) an automatic sampling and analysis of gas was carried out by gas sampling tubes which were periodically inserted with an electric winch into the furnace throat (Fig.1). This method was superseded in 1954 by building into the furnace a permanent water cooled probe with sampling tubes (Fig.2). Both methods were found to be impracticable due to blocking of the sampling tubes by dust and erroneous operation of automatic gas analyzers. In 1956 a scheme of controlling gas distribution along two throat diameters was based on temperature measurements. Four water cooled probes containing a thermocouple traverse the furnace throat from the wall to the centre giving a continuous temperature record across two perpendicular dia-

Card 1/2

133-2-3/19

An Automatic Control of Gas Distribution in the Blast Furnace Stack.  
meters. The scheme is described in some detail (Fig.3).  
Electrical circuit is shown in Fig.4 and a sample of the  
record obtained in Fig.5. The probes are moved into and  
out of the furnace with electrical winches. Time of measur-  
ing traverse - 7 min. When the measuring is completed  
thermocouples are withdrawn into the furnace lining. The  
scheme operates either fully or semiautomatically, its  
operation was found to be satisfactory and it is recommended  
for use in other works. The following participated in the  
design of the apparatus: Dolganeva and Khlebnikova. There  
are 5 figures and 5 references, all Russian.

ASSOCIATION: Kuznetsk<sup>17</sup> Metallurgical Combine (Kuznetskiy Metallurgi-  
cheskiy Kombinat).

AVAILABLE: Library of Congress.

Card 2/2

BURLO, Y.I.A.; BURTSSEV, V.V.

Automatic control of blast furnace air preheaters. Stal' 20 no.6:  
491-495 Je '60. (MIRA 14:2)

1. Kuznetskiy metallurgicheskiy kombinat.  
(Air preheaters) (Automatic control)

BURTSEV, V.V.; RAYEV, Yu.O.

Arrangement for the blast distribution in the furnace tuyeres.

Metallurg 7 no.4:9-10 Ap '62.

(MIRA 15:3)

1. Nachal'nik tekhnicheskogo byuro tsekha kontrol'no-izmeritel'nykh priborov i avtomatiki (for Burtsev). 2. Nachal'nik uchastka domennogo tsekha Kuznetskogo metallurgicheskogo kombinata (for Rayev).

(Blast furnaces--Equipment and supplies)

YAKOVLEV, P.D.; BURTSEV, V.V.

Characteristics of the structure of beryllium deposits. Geol. rud.  
mestorozh. 6 no.1:51-68 Ja-F '64.

(MIRA 17:11)

1. Kafedra geologii i mestorozhdeniy poleznykh iskopayemykh Mos-  
kovskogo instituta stali i splavov.

MUZALEVSKIY, O.G., kand. tekhn. nauk; BURTSEV, V.V., inzh.

Effect of roll stoppage on the distribution of metal deformation  
in the zone of reduction during rolling. Stal' 25 no.8:828-  
830 S '65. (MIRA 18:9)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy  
metallurgii.

YAKOVLEV, P.D.; BURTSEV, V.V.; SOLOMOVA, L.P.

Structural conditions for the localization of beryllium  
mineralization in scarns. Izv.vys.ucheb.zav.; tsvet.mat.  
8 no.2:3-7 '65. (MIRA 19:1)

1. Kafedra geologii i mestorozhdeniy poleznykh iskopayemykh  
Moskovskogo geologorazvedochnogo instituta. Submitted  
March 5, 1964.

*BURTSEV, V. Ya.*

AID P - 2906

Subject : USSR/Electricity

Card 1/2 Pub. 26 - 3/32

Authors : ~~Burtsev, V. Ya.~~ and Pavlenko, L. I., Engs., and  
~~B. I. Rukovnov~~, Kand. Tech. Sci.

Title : Combustion of pulverized Donetsk anthracite culm in  
furnaces with inclined-horizontal sole

Periodical : Elek.sta. 7, 9-13, J1 1955

Abstract : The article reports on experiments in operating  
furnaces with a simplified system of liquid slag  
removal. Data on boilers, waterwalls, economizers  
and other equipment used for this experiment are  
given. The operation of furnaces is explained in  
detail. Some recommendations, i.e. the use of  
refractory bricks for the sole, uninterrupted  
liquid removal of slag, etc. are made. Five  
diagrams, 1 table.

Elek.sta., 7, 9-13, J1 1955

AID P - 2906

Card 2/2 Pub. 26 - 3/32

Institution : None

Submitted : No date

"APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307710007-6

*BLURT SEV. V. 1A*

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307710007-6"

SKLYARENKO, I.P.; KRIVITSKIY, M.D.; KRIGMAN, F.Ye.; BURTSEV, Ye.F.

Reflective beta-ray thickness gauge (BOTOP-3A) for precipitated  
coal dust for use in mines. Atom. energ. 11 no.3:282-284 S '61.  
(MIRA 14:9)

(Coal mines and mining--Safety measures)  
(Mine dusts)

BURTSEV, Ye.F., inzh.

New safety devices. Bezop.truda v prom. 6 no.7:13-17 J1 '62.  
(NIRA 15:7)

1. Khar'kovskiy zavod marksheyderskikh 'nstrumentov.  
(Mining engineering--Safety appliances)

SILINSKIY, P.P., otv.red.; BURTSEV, Ye.G., red.; GAVRILOV, M.K., red.;  
MALYSHEV, R.P., red.; CHUYKO, K.V., red.; SHOTSKIY, V.P., red.;  
FRIDMAN, V.G., red.; SOROKINA, T.I., tekhn.red.

[Irkutsk Province; a concise manual of its economy and statistics]  
Irkutskaya oblast'; kratkii ekonom-statisticheskii sbornik.  
Irkutskoe knizhnoe izd-vo, 1958. 165 p. (MIRA 12:4)

1. Akademiya nauk SSSR. Vostochno-Sibirskiy filial, Irkutsk.  
(Irkutsk Province--Statistics)

BURTSEV, Yu.A., kand.sel'skokhozyaystvennykh nauk

Developing makhorka varieties with few suckers. Agrobiologiya  
no. 3:345-349 My-Je '60. (MIRA 13:12)

1. Ukrainskaya opytnaya stantsiya po tabaku i makhorka,  
Simferopol'.

(Tobacco breeding)

BURTSEV, Ye. F., inzh.-mekhanik

Instruments for coal mines. Ugol' Ukr. 6 no.10:36-38 0 '62.  
(MIRA 15:10)

(Coal mines and mining--Equipment and supplies)

ZOTOV, V.P.; SILUYANOV, V.G.; GUGINA, Ye.F.; AUERMAN, L.Ya.; ALEKHINA, M.S.;  
BEZZUBOV, A.D.; BODROV, V.A.; BUDNYI, A.V.; BURTSEV, Ye.L.;  
VAYNSHTEYN, V.O.; GAVRILOV, A.N.; GORBATOV, V.M.; GRITSENKO, N.N.;  
DOLGUSHEVA, L.I.; YEDYGENOV, K.Ye.; ZHURAVLEVA, S.S.; ZACHESKIN,  
Ya.A.; IVKIN, A.P.; IZOTOV, A.K.; IL'INSKIY, N.A.; IRINARKHOVA,  
A.M.; KARPENKO, A.K.; LYSOGOR, P.M.; LUPISH, A.T.; OLEYNIKOV, V.V.;  
ORANZHEREYEVA, V.F.; PETROV, N.A.; PYATIBRATOV, M.A.; ROMANOV,  
A.N.; RAUBE, P.V.; RYZHENKO, L.P.; SEMYKIN, A.A.; SHEFER, A.P.

G.IA.Ivanov; obituary. NTO 4 no.10:39 0 '62. (MIRA 15:9)  
(Ivanov, Georgii Iakovlevich, 1897-1962)

BURTSIN, Ye. M.

Psychotherapy in the practical work of a district hospital doctor.  
Sov. med. 28 no.6:92-94 Je '65. (MIRA 18:8)

1. Khotiml'skaya uchastkovaya bol'nitsa (glavnyy vrach rayona  
D.G. Balov) Palekhskogo rayona Ivanovskoy oblasti.

NALIVAYKO, V.I.; BURTSEV, Yu.A.; MANSUROVA, L.G.

Proton magnetometer for observatories. Geofiz. prib.  
no.9:75-86 '61. (MIRA 15:11)  
(Magnetometer)

BURTSEV, Yu.A.

Using the PM-1 proton magnetometer in highly accurate geomagnetic measurements. Geomag. i aer. 2 no.5:998-1000 S-O '62.

(MIRA 15:10)

1. Institut zemnogo magnetizmam ionosfery i rasprostraneniya radiovoln AN SSSR.

BURTSEV, Yu.A., kand. sel'skokhoz. nauk; BURTSEVA, G.Yu.

Developing makhorka varieties without suckers. Agrobiologiya  
no.2:284-286 Mr-Apr '65. (MIRA 18:11)

1. Ukrainskaya opytnaya stantsiya po tabaku i makhorke, g.  
Priluki.

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																										PROCESSES AND PROPERTIES INDEX																									
BUETSCH, L. F.																																																			
SA																										B 64																									
<p>3530. Drying of power transformers with acceleration of the process of internal diffusion. BIRNEY, YU. B. AND SWELMITSKY, G. G. <i>Elektr. St.</i> 30, 30-3 (July, 1949) <i>In Russian</i>.—? is only when the moisture gradient, determining the rate of internal diffusion and transport of the liquid from the interior to the surface of the insulating materials, decreases, that the application of a temperature gradient introduces an appreciable acceleration of the drying process. Drying curves for 125, 180 and 800 kV transformers, treated in a special cupboard without vacuum, are given. B. F. K.</p>																																																			
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14780 74																										11447 104 151																									
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S/062/61/000/011/011/012

B103/B147

11.2121

AUTHORS: Ravich, G. B., and Burtsev, Yu. N.

TITLE: Thermal conductivity of 2, 4, 6-trinitrotoluene in solid and liquid state

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 11, 1961, 2091 - 2092

TEXT: The thermal conductivity of 2, 4, 6-trinitrotoluene in solid and liquid state was studied from 10 to 96<sup>o</sup>C. An apparatus (Fig. 2) was used, which is based on the relative measurement of thermal conductivity of a thin layer of the substance at a steady heat flow. The apparatus allowed the study of very small quantities (~1 - 1.5 g). Blocks (1) and (3) are kept by thermostats at different temperatures so that a constant temperature difference is obtained between the two surfaces of a 0.5 - 1 mm layer. The small thickness and heating from above prevented convection. Due to special protective rings (5) and (6) the maximum heat losses are 190, the measuring error does not exceed 2%. The standard substances of wellknown heat conductivity were: water, glycerin, and air. The results Card 1/2 ✓

29524

S/O 52/61/000/011/011/012  
B103/B147

Thermal conductivity of...

are shown in Fig. 1 which contains also data of Ref. 3 (see below), of A. F. Belyayev, N. B. Matyushko (Ref. 4, Dokl. AN SSSR, 30, No. 7, 624 (1941)) and of Ref. 2 (see below). The data of Refs. 3 and 4 agree well with those of the authors within the limits of experimental error. The values found by the authors are much higher than those of Ref. 2. Here, differences up to 200% are established for the thermal-conductivity data of trotyl. This is thought to be due to a systematic error. A sharp decrease of thermal conductivity of solid trotyl in the neighbourhood of the melting point was observed only when the thermal conductivity of a double layer consisting of fused and solid substance was measured. There are 2 figures and 7 references: 4 Soviet and 3 non-Soviet. The two references to English-language publications read as follows: Ref. 2: J. H. Read, D. M. Lloyd, Trans. Faraday Soc., N 309, 9, 720 (1948); Ref. 3: A. M. Prentiss, Rept. and Circ. of the Nat. Research Council, No. 52, 44 S. ✓

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova  
Akademii nauk SSSR (Institute of General and Inorganic  
Chemistry imeni N. S. Kurnakov of the Academy of Sciences  
USSR)

Card 2/4 2

21980

S/020/61/137/001/004/006  
B101/B203

5.4700(1273,1320,1043)

AUTHORS: Ravich, G. B. and Burtsev, Yu. M.

TITLE: Effect of polymorphism on thermal conductivity

PERIODICAL: Doklady Akademii nauk SSSR, v. 157, no. 5, 1961, 1155-1157

TEXT: The authors studied reversible and irreversible transitions of modifications of polymorphous substances. To study the effect of polymorphism on thermal conductivity, an apparatus was designed (Fig. 1) whose maximum error of measurement was 2%. It consists of the cylinder 1 (inside diameter 3-4 mm), the funnel tube 2, the four-channel capillary tube (outside diameter 1.5-2.0 mm) which is centrally inserted in 1 by means of the Teflon stopper 3, and contains the copper-constantan thermocouple 5 (diameter 0.10 mm) and the nichrome heater 6 (diameter 0.10 mm). The cylinder 1 is surrounded by two jackets 7 and 8, through which liquid flows from a Wobser thermostat; the temperature of the liquid is measured by thermocouple 9 in the capillary tube 10. The apparatus is closed by a cover 11. The socket 12 with cock 13 is connected to the vacuum pump. 5 and 9 are connected in such a way that both

Card 1/5

21980

Effect of polymorphism on thermal ...

3/020/61/137/005/024/026  
B101/B203

the temperature on the walls of 4 and 1 and the temperature difference can be measured. A PPTN-1 (PPTN-1) potentiometer is used for measuring. If heater 6 is fed with constant amperage, the wall of 1 remains at constant temperature, and the temperature difference between 4 and 1 only depends on the thermal conductivity  $\lambda$  of the intermediate substance:

$$t_1 - t_2 = Q \ln(d_2/d_1) / 12\pi, \text{ where } Q \text{ is the heat amount emitted from the heater per unit time, } l \text{ is the length of the capillary tube 4, } t_1 \text{ is the temperature of 4, } t_2 \text{ that of 1, } d_2 \text{ the diameter of 1, } d_1 \text{ the diameter of 4.}$$

The apparatus was calibrated with substances whose  $\lambda$  was exactly known, such as water, glycerin, toluene, air. On the basis of the calibration curves  $\Delta t = f(\lambda)$ , the unknown  $\lambda$  of other substances was determined. In the present study, the  $\lambda$  of p-dichlorobenzene was measured between -40 and +96°C. The substance was molten in cylinder 1, and the  $\lambda$  of the melt was determined (Fig. 2, curve I). Then, the substance was slowly or quickly crystallized, and the  $\lambda$  determined for the various solid phases. Two stable modifications were found:  $\alpha$  (Curve IV) with  $\lambda = (29 - 35) \cdot 10^{-5}$  cal/cm.sec.degr, and  $\beta$  (Curve III) with

Card 2/5

21980  
S/020/61/137/005/024/026  
B101/B203

Effect of polymorphism on thermal ...

$\lambda = (37 - 40) \cdot 10^{-5}$  cal/cm.sec.degr. The transition temperature for  $\alpha \rightleftharpoons \beta$  lies at  $\sim 32^\circ\text{C}$ .  $\alpha$  can be overheated to  $40^\circ\text{C}$  by quick heating,  $\beta$  can be undercooled to  $30^\circ\text{C}$  by quick cooling. Besides, metastable modifications were found.  $\beta'$  (Curve II) is formed by quick cooling; it exists between  $+32$  and  $+53^\circ\text{C}$ ,  $\lambda = (63 - 70) \cdot 10^{-5}$  cal/cm.sec.degr. This modification passes over to  $\beta$  after 4-5 days. There may be other, briefly existing, metastable forms between  $\beta$  and  $\beta'$ . The transition  $\beta \rightarrow \alpha$  occurs via the metastable form  $\alpha'$  (Curve V),  $\lambda = (35 - 39) \cdot 10^{-5}$  cal/cm.sec.degr. There are 2 figures and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: G. A. Jeffrey, W. J. McVeagh, J. Chem. Phys., 23, no. 6, 1165 (1955).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Academy of Sciences USSR)

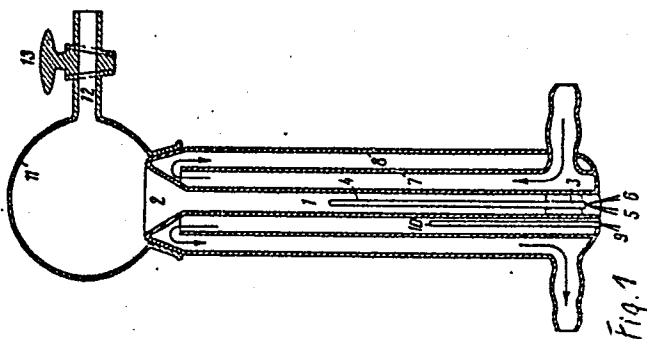
PRESENTED: November 25, 1960, by I. V. Tananayev, Academician

Card 3/5

Effect of polymorphism on thermal ...

SUBMITTED: November 23, 1960

Fig. 1. Apparatus for measuring the thermal conductivity of substances in solid and liquid state.



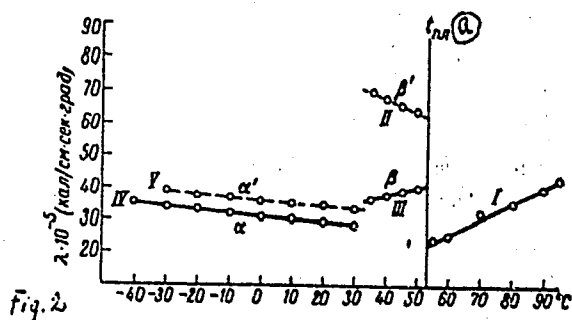
Card 4/5

21980

S/020/61/137/005/024/026  
B101/B203

Effect of polymorphism on thermal ...

Fig. 2. Thermal conductivity of p-dichlorobenzene. Legend: (a) melting point.



Card 5/5

1. ~~BURTSEVA, A.~~
2. USSR (600)
4. Adult Education
7. Help young student workers daily, V Pom.profaktivu no. 10, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953. Unclassified.

BURTSEVA, E. K.

Chemical Abst.  
Vol. 45, No. 9  
May 10, 1954  
Soils and Fertilizers

✓ Thermochemical method of heating frozen soils. E. K. Burtseva. *Soviet Prom.* 29, No. 5, 28 (1951).—The thermochemical reaction, the oxidation of Al by  $\text{Fe}_2\text{O}_3$ , was used. Pack 1 kg. of the mixt. in a tube 40 mm. in diam. and 242 mm. long and arrange for firing by a Bickford fuse and metallic Mg. Place this tube in the bottom of a drilled hole in the frozen soil to prevent heat loss to the surface. This amt. of mixt. raises 1 cu. m. of soil with 10% moisture from  $-12^\circ$  to  $+4^\circ$ . A. G. Guy

BURTSEVA, G.Ye.; SHATELEN, M.A., chlen-korrespondent.

Certain advantages of consolidation of power systems having both thermo- and hydroelectric power plants. Izv.AN SSSR Otd.tekh.nauk no.9:1282-1287 S '53.  
(MLRA 6:10)

1. Akademiya nauk SSSR (for Shatelen).  
(Electric power distribution) (Hydroelectric power stations)

Burtsev, G. Ye.

PLATE I BOOK INFORMATION 809/3407

Academic's book series. Scientifically justified in G.M. Krut'nikov's  
 Problems of power engineering. Collection of articles dedicated to ac-  
 celeration G.M. Krut'nikov. Moscow, 1959. 80 p. 800 copies printed.

Eds. of Publishing House: S.D. Anisimov, P.Y. Dubov, P.I. Dubov, and  
 S.K. Krut'nikov. Moscow, 1959. 80 p. 800 copies printed.  
 Academy of Sciences USSR. V.I. Yegor, A.S. Petrovskiy, M.A. Sviridov,  
 K.F. Ginzburg, E.S. Bogdanov, Candidate of Technical Sciences, S.K. Krut'nikov,  
 Candidate of Technical Sciences, M.K. Isakov, Candidate of Technical Sciences,  
 and I.E. Smolov.

REMARKS: This collection of articles is intended as a tribute to the memory  
 of Academician G.M. Krut'nikov.

CONTENTS: The collection contains sixty articles by Soviet scientists and  
 engineers on the problems of power engineering. The articles deal with problems  
 of the national development of electrical and thermal power engineering,  
 power engineering technology and the physics of combustion. In particular,  
 are mentioned. References are given to most articles.

Krut'nikov, S.I. Some Special Features of Power Development in Power Engineering in the U.S.S.R.	167
Krut'nikov, S.I. Methods of Determining Technical-Economic Indices of Rural Electrical Networks	174
Prishvin, P. Ya. The Present State and Prospects of Future Use of Kineticity in Rural Regions of the USSR	186
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Dubov, P.Y. Conditions for Representing Heating Systems with Phase Burning of Fuel	355
Krut'nikov, S.I., M.A. Sviridov, M. Ye. Shilman. Heat Trans- mission in Steam-Generating Tubes at High Pressures	373
Kozlov, S.I., Yu.A. Enikanyan. Calculation of Resistance and of Heat Exchange in a Stream of Uncompressed Liquid in the Presence of a Positive Pressure Gradient	403

BOLOTOV, V.V., doktor tekhn.nauk (Leningrad); BURTSEVA, G.Ye., kand.tekhn.  
nauk (Leningrad); ZAKHAROVA, Ye.P., inzh. (Leningrad)

Taking the intersystem effect into account when designing large  
power transmission systems. Elektrichestvo no.8:16-22 Ag '60.  
(MIRA 13:8)

(Electric power distribution)

BURTSEVA, G.Ye.

Methodology for determining the economic efficiency of shunting  
electric power transmission systems. Sbor. rab. po vop. elektromekh. no.  
8:18-25 '63.

(MIRA 16:5)

(Electric power distribution)

BURTSEVA, G.Ye.; ZAKHAROVA, Ye.P.

Prospects of the development of large intersystem power  
transmission networks. Sbor. rab. po vop. elektromekh. no.10:  
3-15 '63. (MIRA 17:8)

BURTSEV, Yu.A., kand. sel'skokhoz. nauk; BURTSEVA, G.Yu.

Developing makhorka varieties without suckers. Agrobiologiya  
no.2:284-286 Mr-Apr '65. (MIRA 18:11)

1. Ukrainskaya opytnaya stantsiya po tabaku i makhorke, g.  
Priluki.

5 (4)

AUTHORS:

Krasil'shchikov, A. I., Volchkova,  
L. M., Burtseva, I. K., Plyasunov, V. D. SOV/20-125-6-31/61

TITLE:

On the Mechanism of the Intercrystalline Corrosion of  
Stainless Steel in Nitric Acid (O mekhanizme mezhkristallitnoy  
korrozii nerzhaveyushchey stali v azotnoy kislote)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 6,  
pp 1285-1287 (USSR)

ABSTRACT:

The authors prove that a current of differential depolarization flows between two electrodes made from stainless steel (Fig 1). The electrode located in the more diluted acid is dissolved anodically. Similar currents may occur in microcracks, in which the concentration of the nitric acid decreases due to corrosion reaction, whereas the outer surface acts as a cathode with acid concentration remaining constant. Corrosion is considerably increased only by the chromium oxidized to an anion by nitric acid, but it is just chromium that is a component of stainless steels. The character of the corrosion depends on the ratio between the current  $i_1$  of differential depolarization and the general current  $i_2$  of the corroding

Card 1/2

On the Mechanism of the Intercrystalline  
Corrosion of Stainless Steel in Nitric Acid

SOV/20-125-6-31/61

dissolution. At  $i_1 > i_2$  corrosion is intercrystalline, at  $i_2 > i_1$  uniform corrosion takes place. There are 2 figures and 4 references, 2 of which are Soviet.

PRESENTED: January 22, 1959, by A. M. Frumkin, Academician

SUBMITTED: January 22, 1959

Card 2/2

S/076/62/036/012/004/014  
B101/B180

AUTHORS: Burtseva, I. K., Plyasunov, V. D., and Krasil'shchikov, A. I.  
(Moscow)

TITLE: Passivity and intercrystalline corrosion of stainless steel  
in nitric acid

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 12, 1962, 2687 - 2692

TEXT: The passivity of stainless steels X 17-T (Kh17-T) and Я1-T (Ya1-T) in 0.5 - 56%  $\text{HNO}_3$  was tested at 60°C and an anodic polarization current density of  $1 \mu\text{A}/\text{cm}^2$ , with other conditions varying. Results: In Ya1-T, the passivation potential increases with acid concentration and passivation is not affected by the anode current above concentrations of 20%. The difference in the potentials of steel specimens which have been completely, and only half, immersed in a 2% solution is 700 mv for Ya1-T and lower in 56% acid. The polarization current density, however, is higher in concentrated acid, reaching  $0.5 \mu\text{A}/\text{cm}^2$  in 56%  $\text{HNO}_3$ . The potential is more positive for a completely immersed than a half-immersed specimen. A

Card 1/2

Passivity and intercrystalline ...

S/076/62/036/012/004/014  
B101/B180

current of differential depolarization occurs between specimens of the same steel which have been immersed in acids of different concentrations, the one dipped in the diluter acid acting as anode. The current density reaches  $0.5 - 1.0 \mu\text{A}/\text{cm}^2$  and intercrystalline corrosion occurs. From this it is concluded that the surface inside a microcrack filled with air will also act as anode, and initiate intercrystalline corrosion. The corrosion reduces the acid concentration in the crack and the depolarization current takes effect. The damaging effect of precipitated carbides lies not in the fact that they bind the chromium but in that they may become depassivation centres. There are 7 figures.

ASSOCIATION: Gosudarstvennyy institut azotnoy promyshlennosti (State Institute of the Nitrogen Industry)

SUBMITTED: May 30, 1961

Card 2/2

L 16919-63

EWP(q)/EWT(m)/BDS

AFFTC/ASD

Pad

JD/HW/JG/WB

S/076/63/037/004/009/029

62  
61

AUTHOR: Burtseva, I. K., Krasil'shchikov, A. I.

TITLE: Passivity and intercrystalline corrosion of stainless steel in nitric acid. II

16

16

PERIODICAL: Zhurnal fizicheskoy khimii, V. 37, No. 4, 1963, 810-816

TEXT: The article is devoted primarily to an explanation of the role of carbides in intercrystalline corrosion of stainless steel which at the present time is a matter of heightened interest. An investigation is made of the effect of carbides on the differential depolarization current and also on the phenomena of the repassivation of stainless steel. A partially immersed stainless steel specimen is passivated with greater difficulty but is more easily overpassivated than a completely immersed specimen. The passivation is hindered and overpassivation promoted by the precipitated chromium carbides. Precipitation of chromium carbides considerably augments the differential depolarization currents on the stainless steel in the nitric acid and also the current density between the differently immersed specimens. This leads to a sharp increase in the intercrystalline corrosion of the stainless steel which is induced by the carbide precipitation. The explanation of the ability of the precipitated chromium carbides to

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Card 1/2

L 16919-63

S/076/63/037/004/009/029

Passivity and intercrystalline corrosion of ...

intensify the intercrystalline corrosion of stainless steel in nitric acid lies in the fact that they are electron donors, possess reducing properties, and are unique centers of the depassification of stainless steel. There are 7 figures.

ASSOCIATION: Nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti i produktov organicheskogo sinteza (Scientific Research and Design Institute of the Nitrogen Industry and of Products of Organic Synthesis)

SUBMITTED: April 3, 1962

Card 2/2



L 21328-65

ACCESSION NR: AP4044438

Investigated stainless steels at 60C in the course of 1500 hours.

Chromium carbides facilitates overpassivation and initiation of intercrystalline corrosion. Orig. art. has: 3 tables and 6 figures

ASSOCIATION: Gosudarstvennyy institut azotnoy promyshlennosti (State Institute of the Nitrogen Industry)

SUBMITTED: 28Jul63

ENCL: 00

SUB CODE: 00

NR REF SOV: 015

OTHER: 007

2/2

BURTSEVA, K.V., kand.med.nauk

Subcutaneous rupture of the retroperitoneal part of the duodenum.  
Sov.med. 23 no.11:143-145 N '59. (MIRA 13:3)

1. Iz Lipetskoy oblastnoy bol'nitsy No.1 (glavnyy vrach F.D. Boronin).  
(DUODENUM wds. & inj.)

Burtseva, L. M.

CH

Lead-isotope distribution between a solution and the crystals of nonisomorphic salts. The  $K_2SO_4$ - $PbSO_4$ - $H_2O$  system. M. S. Merkulova, V. I. Chastukhina, and L. N. Burtseva (M. V. Lomonosov Moscow State Univ.). Dokl. Akad. Nauk S.S.S.R. 102, 1167-9 (1955).—The distribution of  $Pb^{214}$  between the soln. and the crystals of anhyd.  $K_2SO_4$  was studied at 25–100°. The results indicate the formation of inner adsorption systems in the distribution of the Pb between the soln. and the crystals. Knowledge of the relation between the equil. coeff. of crystn. and the concn. of the substance distributed may furnish means for distinguishing copptn. accompanied by the formation of inner adsorption systems, from copptn. of isomorphous or anomalous mixed crystals.

W. M. Sternberg

②

PM

PM

BURTSEVA, L.N.; LEVIN, V.I.; GOLUTVINA, M.M.; BUBNOV, V.S.

Separation of radioactive manganese without a carrier from  
deuteron irradiated chromium. Radiokhimiia 1 no.2:231-235  
'59. (MIRA 12:8)

(Manganese--Isotopes) (Chromium) (Deuterons)

BUL'TSEVA, L.N.

PHASE I BOOK EXPLOITATION 307/563

Metody polucheniya i izmereniya radioaktivnykh preparatov: atomik  
skay (metody dlya izmereniya i podgotovki i izmereniya radio-  
aktivnykh preparatov; podgotovka i izmereniya radioaktivnykh  
preparatov). 307 p. 1960. 307 p. 1960. 307 p. 1960. 307 p. 1960.  
1960. 307 p. 1960. 307 p. 1960. 307 p. 1960. 307 p. 1960.

General Ed.: Valeriy Viktorovich Boshkarev; Ed.: M.A. Sazuroi  
Tech. Ed.: N.A. Vlasova.

FRONTIER: This collection of articles is intended for scientific and  
technical personnel working in the production of radioactive iso-  
topes.

CONTENTS: The collection contains original studies on methods of  
obtaining and measuring radioactive preparations. According to  
the type of the articles, the collection is divided into two parts.  
The first part contains articles on the production of radioactive iso-  
topes. The second part contains articles on the measurement of radio-  
active isotopes. In addition to several survey articles  
the collection contains discussions on the production of radio-  
active isotopes and isotopic radioactive preparations, including  
a number of carrier-free isotopes and several isotopes, including  
therapeutic preparations. Also discussed are methods for prepa-  
ring a number of tagged organic compounds, problems in the analy-  
sis of tagged organic compounds, the absolute and relative measure-  
ment of activity, and the radiometric analysis of preparations.  
New instruments and equipment are described and instructions con-  
cerning measurement methods and technique are included. V.I. Levin,  
Candidate of Chemical Sciences, V.P. Shishkov, Candidate of Tech-  
nical Sciences, I.N. Boshkarev, Candidate of Biological Sciences,  
and N. Boshkarev, Candidate of Chemical Sciences, are mentioned  
as having helped in the preparation and preparation of the  
material for publication. References accompany each article.

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ium Sulfide, and Barium Sulfate Containing S<sup>35</sup> for Radiometric  
Measurements 290  
Bul'tseva, L.N., M.A. L'vova, and N.N. Vozuk. Methods of Pre-  
paring Standard  $\beta$ -Emitting 293

AVAILABLE: Library of Congress (QD465.B47)

BURTSEVA, N.P.

Ash composition of petroleum in the Terek-Daghestan region. Trudy  
VNIGRI no.83:332-354 '55. (MLRA 8:10)  
(Daghestan--Petroleum--Analysis) (Terek Range--Petroleum--  
Analysis)

BURTSEVA, N.P.; SILINA, N.P.

Technique for separating light bitumen fractions from rocks.  
trudy VNIGRI no.174:262-270 '61. (MIRA 14:12)

(Bitumen)  
(Rocks--Analysis)

5 (3)  
 AUTHORS: Kuskov, V. K., Burtseva, T. A. SOV/20-125-4-33/74

TITLE: Production of Alkyl Phenols by Alkylation of Triphenyl Borate  
 (Polucheniye alkilfenolov alkilirovaniyem trifenilborata)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 4, pp 811-813  
 (USSR)

ABSTRACT: The alkylation of phenol by alkyl halides (according to Fridel-Krafts) is possible without any difficulties only with reactive tertiary alkyl halides. In the case of primary and secondary alkyl halides it is possible that the alkylation is complicated by the reaction of aluminum chloride with phenol in heat. In the present paper the authors found that triphenyl borate is easily alkylated in the presence of catalytic amounts of aluminum chloride by alkyl halides (see equation). However, it is not necessary that all 3 phenyl groups are alkylated. Apart from alkyl phenols always dialkyl phenols and phenol have been produced. All products are soluble in 10% NaOH. The reaction proceeds successfully under normal conditions. After the alkylation had been finished the mixture was poured into ice water. The hydrolysis of aluminum chloride and aryl borates

Card 1/2

Production of Alkyl Phenols by Alkylation of  
Triphenyl Borate

SOV/20-125-4-33/74

took place. In this connection mainly para-substituted alkyl phenols form and a usual isomerization of the primary alkyl to a secondary. Table 1 shows the production of phenols by alkylation of triphenyl borate by alkyl halides. The following experimental part provides the usual data. There are 1 table and 11 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova  
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: December 26, 1958, by S. I. Vol'fkovich, Academician

SUBMITTED: October 16, 1958

Card 2/2

BURTSEVA, T.A.

Simplifying the methods and reducing the amount of materials used in  
the estimation of coal reserves; Mat.GKZ no.2:65-70 '61. (MIRA 16:3)  
(Coal geology)

S/204/61/001/005/001/008  
EO75/E484

AUTHORS: Plate, A.F., Nikitina, Z.K., Burtseva, T.A.

TITLE: Catalytic conversions of endo-trimethylene-norbornane  
on alumino-silicate. Formation of adamantane

PERIODICAL: Neftekhimiya, v.1, no.5, 1961, 599-603

TEXT: A laboratory preparation of adamantane from endo-trimethylene-bornornane (fully hydrogenated dimer of cyclopentadiene) (I) was carried out in a quartz tube reactor and in autoclave. In the first method the alumino-silicate catalyst activated by cyclohexane was contacted with (I) for 42 minutes at 400 to 475°C. After distilling off naphthenes and paraffins and separating aromatic hydrocarbons by silica gel from the catalysate, ✓ adamantane was isolated from the residue by filtration and recrystallization in 13% yield. In the autoclave method the catalyst and I (1:5) were heated at 350 to 380°C for 6.5 to 16.5 hours giving 9 to 10% adamantane. The results suggest that adamantane was formed in crude oils by isomerization of naturally occurring terpene compounds under the action of natural alumino-silicates. Although adamantane is the main product of the  
Card 1/ 3

Catalytic conversions ...

S/204/61/001/005/001/008  
E075/E484

conversions, considerable quantities of by-products are also formed. These are: paraffins, mono- and bicyclic naphthene and aromatic hydrocarbons. Proportion of the latter in the catalysate increases markedly with increasing temperature of conversion. Thus, 34.2% of alicyclic hydrocarbons (including adamantane) were obtained at 400°C and 15.8% at 475°C, whilst 21.1% of aromatic hydrocarbons were formed at 400°C and 39.1% at 475°C. Cracking intensifies with increasing temperature, the concentration of butanes in the gaseous products being 44% at 400°C and only 10% at 475°C. The amount of coke on the catalyst remains approximately the same, i.e. 6 to 6.4%. It was noted that a considerable quantity of fraction with boiling point of 155 to 168°C /760 mm was obtained from the catalysate after runs at 400°C and after separation of aromatic and hexahydroaromatic hydrocarbons. It is possible that this fraction contains pentalane. Acknowledgments are expressed to D.A.Kondrat'yev, I.P.Yakovlev and Yu.P.Yegorov for their assistance in the investigations carried out at the Institut organicheskoy khimii im. N.D.Zelinskogo (Institute of Organic Chemistry imeni N.D.Zelinskiy).

Card 2/3

Catalytic conversions ...

S/204/61/001/005/001/008  
E075/E484

S. Landa and S. Hala are mentioned in the article in connection with their contribution in this field. There are 2 tables and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The references to English language publications read as follows: Ref.4: P. v. Schleyer. J. Amer. Chem. Soc., v.79, 1957, 3292; Ref.5: P. v. Schleyer, M.M.Donaldson. J. Amer. Chem. Soc., v.82, 1960, 4645.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.  
M.V.Lomonosova Kafedra khimii nefiti  
(Moscow State University imeni M.V.Lomonosov  
Petrochemistry Department)

SUBMITTED: July 8, 1961

Card 3/3

L 44173-65 EPF(c)/ZWT(m)/T Pr-4 DJ  
ACCESSION NR: AP5011688

UR/0065/65/000/005/0034/0036

AUTHOR: Burtseva, T. A.; Vinogradova, I. E.; Plate, A. F.;  
Danilova, I. A.

TITLE: Diathionones: sulfur-containing additives to lubricating  
oils

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 5, 1965, 34-36

TOPIC TAGS: diathiacyclopentenethione, additive, lubricating oil,  
EP agent, antiwear agent/NPT

ABSTRACT: Two 4,5-dithiacyclo-2-pentenethiones with different substituents have been synthesized and tested as lubricating oil additives. The first, 2,2-dimethyl-4,5-dithiacyclo-2-pentenethione, showed good lubricating and EP properties but a soot-forming tendency. The second, 2,2-dimethyl-4,5-dithiacyclo-2-pentenethione, designated NPT, was prepared by the reaction of 2,2-dimethyl-4,5-dithiacyclo-2-pentenethione with sulfur. The additive activated at 170°C. Tests in TC-14 oil showed that all are effective antiacidizing sulfur-containing additives.

Card 1/2

L 441' 3-65

ACROSSION NR: AP5011688

2

NPT caused greater wear than the LZ-6/9 additive at low loads, this drawback could be considerably alleviated by using NPT in conjunction with antiwear additives such as zinc dithiophosphate. NPT exhibited high thermal stability as it did not decompose in the presence or the absence of metal powders or react with them at 20—300C. NPT was also an antioxidant (in MK-8 oil), but a less effective one than ionol. NPT passed copper corrosion tests at 100C. It was concluded that NPT is a suitable difunctional (antiseizing and antiwear) additive to lubricating oils and its production was recommended. Orig. art. has: 2 tables, and 5 formulas.

ASSOCIATION: MGU im. M. V. Lomonosova; VNII NP

SUBMITTED: 00

ENCL: 00

SUB CODE: EP

NO REF SOV: 002

OTHER: 004

ATD PRESS: 3241

Card 2/2

BURTSEVA, T. I.

USSR/Geology

Card 1/1

Authors	: Burtseva, T. I.
Title	: The stratigraphy of lower-Cambrian deposits of the Irkutsk cirque according to data of a mineral-petrographic analysis
Periodical	: Dokl. AN SSSR, 96, Ed. 2, 363 - 366, May 1954
Abstract	: Complex petrographic investigations of lower-Cambrian rocks extracted from layers of various parts of the Irkutsk cirque enabled one to observe the fixed laws regarding the distribution of correlating mineral associations which are found repeatedly in widely separated sections. This made it possible to consider the separated correlated mineral associations as stratigraphic and to use this as a basis in preparing a stratigraphic chart of the low-Cambrian deposits of the Irkutsk cirque which will be different from the previously prepared charts. Four USSR references, 1 since 1933.
Institution	: Academy of Sciences, USSR, Petroleum Institute
Presented by	: Academician V. A. Obruchev, March 8, 1954

BURTSEVA, T.I.

Mineralogical correlatives to cross sections of Oligocene and  
Miocene deposits of southern Kartlia (Georgian S.S.R.) Trudy  
Inst.nefti.no.5:49-56 '55. (MLRA 8:12)  
(Kartlia--Geology, Stratigraphic)

BURTSEVA, T.I.; ZHURAVLEVA, I.T.

A first discovery of Archaeocyathidae in the Irkutsk amphitheater.  
Dokl.AN SSSR 106 no.5:885-888 F '56. (MLRA 9:7)

1. Paleontologicheskii institut Akademii nauk SSSR. Predstavleno  
akademikom S.I. Mironovym.  
(Irkutsk Province--Archaeocyathidae)

BURTSEVA, T. I., Candidate Geolog-Mineralog Sci (diss) -- "The lithology and stratigraphy of the Ushakov and Motskiy strata of the Lower Cambrian in the Irkutsk amphitheater, based on data from mineralogical-petrographic analysis". Moscow, 1959. 15 pp (Acad Sci USSR, Inst of Geology and Working of Mineral Fuels) (KL, No 25, 1959, 129)

BURTSEVA, T.I.

Stratigraphy and lithology of terrigenous sediments in the lower  
Cambrian of the middle Uda Valley (Eastern Sayan Mountain region).  
Trudy Inst. geol. i razrab. gor. iskop. 1:77-102 '60.

(MIRA 14:1)

(Uda Valley--Geology, Stratigraphic)